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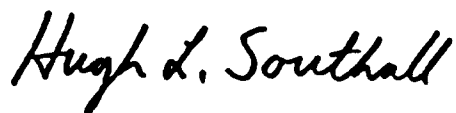
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FOR THE COMMANDER

A handwritten signature in black ink, reading "Hugh L. Southall". The signature is written in a cursive, slightly slanted style.

Hugh L. Southall, Lt. Col., USAF  
Chief, ESD Lincoln Laboratory Project Office

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## TECHNICAL REPORTS

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799	Lower Bounds on Multiple-Source Direction Finding in the Presence of Direction-Dependent Antenna-Array-Calibration Errors	Kuruc, A.R.	24 Oct. 1989	ADA215825
809	Tracking Targets with Bearing Data from a Single Sensor	Gilson, W.H.	13 Jan. 1989	ADA205422
816	On Random Correlation Matrices II: The Toeplitz Case	Holmes, R.B.	23 Mar. 1989	ADA208229
820	Laser-Induced Diode Linking for Wafer-Scale Integration	Cohen, S.S. Wyatt, P.W. Chapman, G.H. Canter, J.M.	16 Mar. 1989	ADA207921
822	Evaluation of Adaptive Phased Array Antenna Far Field Nulling Performance in the Near Field Region	Fenn, A.J.	19 Jan. 1989	ADA204763
823	Optical Spatial Tracking Using Coherent Detection in the Pupil Plane	Swanson, E.A. Carter, G.M.	19 May 1989	ADA209970
840	DARPA Neural Network Study — Final Report (October 1987 — February 1988)		22 Mar. 1989	ADA207580
841	On Analytic Modeling of Lunar Perturbations of Artificial Satellites of the Earth	Lane, M.T.	13 June 1989	ADA210440
842	Moment Method Analysis of Near-Field Adaptive Nulling	Fenn, A.J.	7 Apr. 1989	ADA208228
844	Design Considerations and Experimental Results for Direct-Detection Spatial Tracking Systems	Swanson, E.A. Roberge, J.K.	4 Apr. 1989	ADA208258

## Technical Reports

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845	Diode-Laser Transmitter Development for Space-Based Heterodyne Communication	Taylor, J.A. Pillsbury, A.D. Richardson, M.F. Welford, D.	22 Mar 1989	ADA208212
846	Efficient Detection of Small Moving Objects	Chu, P.L.	21 July 1989	ADA213314
848	Adaptive Detection and Parameter Estimation for Multidimensional Signal Models	Kelly, E.J. Forsythe, K.W.	19 Apr. 1989	ADA208971
849	Adaptive Preprocessing of Nonstationary Signals	Eggers, M.D. Khuon, T.S.	9 May 1989	ADA209646
850	Design and Performance of an On-Satellite Laser Diagnostic System for a Free Space Optical Heterodyne Frequency-Shift-Keyed Communication System	Jayaraman, V. Kintzer, E.S. Garcia, J.G. Pillsbury, A.D.	11 July 1989	ADA211986
851	Binary Sequences of Arbitrary Length with Near-Ideal Correlation	Hirschler-Marchand, P.R.	13 June 1989	ADA209956
853	Optical Anti-aliasing Filters	Knowlden, R.E. Leger, J.R. Swanson, G.J. Kachelmyer, A.L.	13 Sept. 1989	ADA215826
854	Binary Optics Technology: The Theory and Design of Multi-level Diffractive Optical Elements	Swanson, G.J.	14 Aug. 1989	ADA213404
855	Evaluation of a Delay-Doppler Imaging Algorithm Based on the Wigner-Ville Distribution	Schultz, K.I.	18 Oct. 1989	ADA215827
858	Preliminary Experimental Measurement of Isoplanatic Angle	Marquis, D.V. Winick, K.A.	11 Oct. 1989	ADA215828

TR No.			25 Oct. 1989	Technical Reports DTIC No. ADA217332
860	Radiation-Hardened Wafer Scale Integration	Anderson, A.H. Burns, J.A. Chen, C.K. Dunn, G.J. Konkle, K.H. Tsaur, B-Y. Woodward, C.E. Wyatt, P.W.	25 Oct. 1989	ADA217332
864	A Cloud Climatology for the North Pacific Area Centered at Shemya, Alaska	Barnes, J.C. Burke, H-H.K. Joss, T.M.	22 Nov. 1989	ADA217334
865	A Space-Based Optical Communication System Utilizing Fiber Optics	Swanson, E.A. Bondurant, R.S.	9 Nov. 1989	ADA217333
868	On Metric Entropy, Vapnik-Chervonenkis Dimension, and Learnability for a Class of Distributions	Kulkarni, S.R.	14 Dec. 1989	ADA217331
872	SLCSAT Communication System Design Study	Bernstein, S.L. Bondurant, R.S. Bucher, E.A. Chan, V.W.S. Walther, F.G.	23 Aug. 1989	ADA213403

## JOURNAL ARTICLES

### JA No.

- |       |   |   |  |
|-------|---|---|--|
| 5592  | Ion Implantation in III-V Semiconductors  | Donnelly, J.P.  | Chapter 6 in <i>III-V Semiconductor Materials and Devices</i> , North-Holland Publ., 1989, pp. 331-428         |
| 5725  | Inversion Layer Mobility of MOSFET's with Nitrided Oxide Gate Dielectrics                                   | Schmidt, M.A.<br>Terry, F.L., Jr.<br>Mathur, B.P.<br>Senturia, S.D. | IEEE Trans. Electron Devices, Vol. 35, No. 10, October 1988, pp. 1627-1632 ADA206667                           |
| 5729A | The Calculation of the Probability of Detection and the Generalized Marcum Q-Function                       | Shnidman, D.A.  | IEEE Trans. Inf. Theory, Vol. 35, No. 2, March 1989, pp. 389-400 ADA214653                                     |
| 5817  | Optical Processor Components Based on GaAs CCD Technology   | Burke, B.E.<br>Higgins, J.A.  | Chapter 3 in <i>Optical Computing — Digital and Symbolic</i> , Marcel Dekker, Inc., 1989, pp. 65-103 ADA206556 |
| 5974  | Phased Array Antenna Calibration and Pattern Prediction Using Mutual Coupling Measurements                  | Aumann, H.M.<br>Fenn, A.J.<br>Willwerth, F.G.                       | IEEE Trans. Antennas Propag., Vol. 37, No. 7, July 1989, pp. 844-850 ADA214119                                 |
| 5992  | On the Simultaneous Measurement of Spin Components Using Spin-1/2 Meters: Naimark Embedding and Projections | Levine, R.Y.<br>Tucci, R.R.   | Found. Phys., Vol. 19, No. 2, February 1989, pp. 175-187   |
| 5993  | On the Simultaneous Measurement of Position and Momentum: Naimark Embeddings and Projections                | Levine, R.Y.<br>Tucci, R.R.   | Found. Phys., Vol. 19, No. 2, February 1989, pp. 161-173   |
| 6003  | Far-Echo Cancellation in the Presence of Frequency Offset   | Quatieri, T.F.<br>O'Leary, G.C.                                     | IEEE Trans. Commun., Vol. 37, No. 6, June 1989, pp. 635-644 ADA212026  |

## Journal Articles

### JA No.

- |      |  |   |   |
|------|--|---|---|
| 6010 | An Analytical Treatment of Resonance Effects on Satellite Orbits                         | Lane, M.T.  | Celestial Mech., Vol. 42, Nos. 1-4, 1987/1988, pp. 3-38                                   |
| 6020 | Comments on "Estimation Using a Multirate Filter"  | Kerr, T.H., III   | IEEE Trans. Autom. Control, Vol. 34, No. 3, March 1989, p. 384<br>ADA209962               |
| 6033 | Performance of an Adaptive Detection Algorithm; Rejection of Unwanted Signals            | Kelly, E.J.   | IEEE Trans. Aerosp. Electron. Syst., Vol. 25, No. 2, March 1989, pp. 122-133<br>ADA212400 |
| 6036 | Passive Equalization of Semiconductor Diode Laser Frequency Modulation                   | Alexander, S.B.<br>Welford, D.<br>Marquis, D.V.                         | J. Lightwave Technol., Vol. 7, No. 1, January 1989, pp. 11-23<br>ADA209517                |
| 6039 | Element Gain Pattern Prediction for Finite Arrays of V-Dipole Antennas Over Ground Plane | Fenn, A.J.  | IEEE Trans. Antennas Propag., Vol. 36, No. 11, November 1988, pp. 1629-1633<br>ADA206558  |
| 6042 | An Algorithm for Detection of Moving Optical Targets                                     | Pohlig, S.C.  | IEEE Trans. Aerosp. Electron. Syst., Vol. 25, No. 1, January 1989, pp. 56-63<br>ADA209961 |
| 6051 | Bayes Classification of Terrain Cover Using Normalized Polarimetric Data                 | Yueh, H.A.<br>Swartz, A.A.<br>Kong, J.A.<br>Shin, R.T-I.<br>Novak, L.M. | J. Geophys. Res., Vol. 93, No. B12, 10 December 1988, pp. 15,261-15,267                   |
| 6054 | On Suboptimal Detection of 3-Dimensional Moving Targets                                  | Chen, Y.  | IEEE Trans. Aerosp. Electron. Syst., Vol. 25, No. 3, May 1989, pp. 343-350<br>ADA214153   |

## Journal Articles

### JA No.

6058	Planar Circuit Analysis	Gupta, K.C. Abouzahra, M.D.	Chapter 4 in <i>Numerical Techniques for Microwave &amp; Millimeter-Wave Passive Structures</i> , John Wiley & Sons, 1989, pp. 214-333
6059A	Lateral Confinement of Microchemical Surface Reactions: Effects on Mass Diffusion and Kinetics	Zeiger, H.J. Ehrlich, D.J.	J. Vac. Sci. Technol. B, Vol. 7, No. 3, May/June 1989, pp. 466-480 ADA210782
6068	Analysis of Conduction in Fully Depleted SOI MOSFETs	Young, K-L.K.	IEEE Trans. Electron Devices, Vol. 36, No. 3, March 1989, pp. 504-506 ADA209959
6080	Studies of Target Detection Algorithms That Use Polarimetric Radar Data	Novak, L.M. Sechtin, M.B. Cardullo, M.J.	IEEE Trans. Aerosp. Electron. Syst., Vol. 25, No. 2, March 1989, pp. 150-165 ADA211975
6082	Wide-Band Superconductive Chirp Filters	DiIorio, M.S. Withers, R.S. Anderson, A.C.	IEEE Trans. Microwave Theory Tech., Vol. 37, No. 4, April 1989, pp. 706-710 ADA209960
6095	Short-Channel Effect in Fully Depleted SOI MOSFET's	Young, K-L.K.	IEEE Trans. Electron Devices, Vol. 36, No. 2, February 1989, pp. 399-402 ADA207566
6097	Status of CR-Like Lower Bounds for Nonlinear Filtering	Kerr, T.H., III	IEEE Trans. Aerosp. Electron. Syst., Vol. 25, No. 5, September 1989, pp. 590-601 ADA215228
6098	Analytic Example of a Schweppe Likelihood-Ratio Detector	Kerr, T.H., III	IEEE Trans. Aerosp. Electron. Syst., Vol. 25, No. 4, July 1989, pp. 545-558 ADA214065

## Journal Articles

### JA No.

- |       |   |  |  |
|-------|---|--|--|
| 6099  | A Critique of Several Failure Detection Approaches for Navigation Systems                                   | Kerr, T.H., III  | IEEE Trans. Autom. Control, Vol. 34, No. 7, July 1989, pp. 791-792<br>ADA214515            |
| 6100A | Oscillators Using Magneto-static-Wave Active Tapped Delay Lines   | Chen, C-L.<br>Chu, A.<br>Mahoney, L.J.<br>Courtney, W.E.<br>Murphy, R.A.<br>Sethares, J.C. | IEEE Trans. Microwave Theory Tech., Vol. 37, No. 1, January 1989, pp. 239-243<br>ADA207565 |
| 6103  | Optimal Polarizations for Achieving Maximum Contrast in Radar Images  | Swartz, A.A.<br>Yueh, H.A.<br>Kong, J.A.<br>Novak, L.M.<br>Shin, R.T-I.                    | J. Geophys. Res., Vol. 93, No. B12, 10 December 1988, pp. 15,252-15,260                    |
| 6108A | Design Considerations and Experimental Results for Direct-Detection Spatial Tracking Systems                | Swanson, E.A.<br>Roberge, J.K.   | Opt. Eng., Vol. 28, No. 6, June 1989, pp. 659-666<br>ADA210815                             |
| 6112  | Hydrodynamic Dispersion in Rotating-Disk OMVPE Reactors: Numerical Simulation and Experimental Measurements | Patnaik, S.<br>Brown, R.A.<br>Wang, C.A.   | J. Cryst. Growth, Vol. 96, No. 1, May 1989, pp. 153-174                                    |
| 6117  | On p-Local Abelian Group With Decomposition Bases   | Lane, M.T.   | Math. Z., Vol. 202, 1989, pp. 129-141  |
| 6125  | Submicrometer Near-Intrinsic Thin-Film SOI Complementary MOSFET's   | Lee, C-T.<br>Young, K-L.K.   | IEEE Trans. Electron Devices, Vol. 36, No. 11, November 1989, pp. 2537-2547<br>ADA216666   |
| 6129  | Reactive Ion Etching of GaAs and AlGaAs in a $\text{BCl}_3$ -Ar Discharge                                   | Cooperman, S.S.<br>Choi, H-K.<br>Sawin, H.H.<br>Kolesar, D.F.                              | J. Vac. Sci. Technol. B, Vol. 7, No. 1, January/February 1989, pp. 41-46<br>ADA206619      |

## Journal Articles

### JA No.

- |      |   |  |  |
|------|---|--|--|
| 6135 | Spectroscopy and Photochemistry of Gases, Adsorbates, and Liquids                                       | Rothschild, M.   | Chapter 3 in <i>Laser Micro-fabrication: Thin Film Processes and Lithography</i> , Academic Press, 1989, pp. 163-230 |
| 6147 | Effect of Noble Gases on the Properties of Ion Beam Sputtered Niobium Films                             | Lichtenwalner, D.<br>Anderson, A.C.<br>Rudman, D.A.  | J. Vac. Sci. Technol. A, Vol. 7, No. 1, January/February 1989, pp. 102-104<br>ADA205234                              |
| 6161 | Detection Probability for Partially Correlated Chi-Square Targets                                       | Weiner, M.A.   | IEEE Trans. Aerosp. Electron Syst., Vol. 24, No. 4, July 1988, pp. 411-416   |
| 6164 | The Extinction Ratio in Optical Two-Guide Coupler $\Delta\beta$ Switches                                | Donnelly, J.P.<br>Molter, L.A.<br>Haus, H.A.   | IEEE J. Quantum Electron., Vol. 25, No. 5, May 1989, pp. 924-932<br>ADA211996  |
| 6165 | Plasma Etching of Ion Implanted Polysilicon   | Karulkar, P.C.<br>Wirzbicki, M.P.  | J. Electrochem. Soc., Vol. 136, No. 9, September 1989, pp. 2716-2720<br>ADA214152                                    |
| 6169 | Adaptive Phase Compensation in a Raman Look-Through Configuration                                       | Winkler, I.C.<br>Norton, M.A.<br>Higgs, C.   | Opt. Lett., Vol. 14, No. 1, 1 January 1989, pp. 69-71<br>ADA205236   |
| 6170 | Laser-Direct-Written Capacitors and Inductors for GaAs Monolithic Microwave Integrated Circuit Trimming | Chen, C-L.<br>Black, J.G.<br>Doran, S.P.<br>Mahoney, L.J.<br>Murphy, R.A.<br>Ehrlich, D.J. | Electron Lett., Vol. 24, No. 22, 27 October 1988, pp. 1396-1397<br>ADA208547   |
| 6171 | Single-Frequency Microchip Nd Lasers  | Zayhowski, J.J.<br>Mooradian, A.   | Opt. Lett., Vol. 14, No. 1, 1 January 1989, pp. 24-26<br>ADA205233   |
| 6172 | The Resistance of Laser-Diffused Diode Links  | Cohen, S.S.<br>Wyatt, P.W.<br>Chapman, G.H.<br>Canter, J.M.                                | IEEE Trans. Electron Devices, Vol. 36, No. 6, June 1989, pp. 1220-1223<br>ADA212015                                  |



## Journal Articles

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- |      |   |   |   |
|------|---|---|---|
| 6175 | An In-Situ Study of the UV Photochemistry of Adsorbed $\text{TiCl}_4$ by FTIR Spectroscopy  | Purohit, P.V.<br>Rothschild, M.<br>Ehrlich, D.J.  | Chapter in <i>Mechanisms of Reactions of Organo-metallic Compounds with Surfaces</i> , Plenum Publ., 1989, pp. 55-62<br>ADA214118 |
| 6176 | Transport and Kinetics  | Zeiger, H.J.<br>Ehrlich, D.J.<br>Tsao, J.Y.   | Chapter 5 in <i>Laser Micro-fabrication: Thin Film Processes and Lithography</i> , Academic Press, 1989, pp. 285-330              |
| 6179 | Optically Induced Nonresonant Changes in the Refractive Index of $\text{Ti:Al}_2\text{O}_3$   | Wall, K.F.<br>Aggarwal, R.L.<br>Sciacca, M.D.<br>Zeiger, H.J.<br>Fahey, R.E.<br>Strauss, A.J. | Opt. Lett., Vol. 14, No. 3, 1 February 1989, pp. 180-182 ADA206622  |
| 6180 | Novel Scalloped-Mirror Diffraction-Coupled InGaAsP/InP Buried-Heterostructure Laser Arrays  | Yap, D.<br>Walpole, J.N.<br>Liau, Z-L.  | Appl. Phys. Lett., Vol. 54, No. 8, 20 February 1989, pp. 687-689 ADA206623  |
| 6183 | Defect-Related Dielectric Breakdown, Charge Trapping, and Interface-State Generation of Gate Oxides Grown on Zone-Melting-Recrystallized Silicon-on-Insulator Films | Lee, C-T.<br>Chen, C.K.   | J. Appl. Phys., Vol. 65, No. 2, 15 January 1989, pp. 646-650 ADA206624  |
| 6185 | Measurement of the Wave Front of a Pulsed Dye Laser Using an Integrated-Optics Sensor with 200-nsec Temporal Resolution   | Rediker, R.H.<br>Zollars, B.G.<br>Lind, T.A.<br>Hatch, R.E.<br>Burke, B.E.                    | Opt. Lett., Vol. 14, No. 8, 15 April 1989, pp. 381-383 ADA208920  |
| 6186 | Correcting Wind Speed Measurements for Site Obstructions  | Wolfson, M.M.<br>Fujita, T.T.   | J. Atmos. Oceanic Technol., Vol. 6, No. 2, April 1989, pp. 343-352  |

## Journal Articles

### JA No.

- |      |   |  |   |
|------|---|--|---|
| 6187 | Preparation of Superconducting Bi-Sr-Ca-Cu-O Thin Films by Sequential Electron Beam Evaporation and Oxygen Annealing                          | Steinbeck, J.<br>Anderson, A.C.<br>Tsaun, B-Y.<br>Strauss, A.J.  | Appl. Phys. Lett., Vol. 54,<br>No. 5, 30 January 1989,<br>pp. 466-468                     |
| 6188 | Deterministic Photon Bias in Speckle Imaging  | Beletic, J.W.  | Opt. Commun., Vol. 71,<br>No. 6, 15 June 1989,<br>pp. 337-340 ADA210816                   |
| 6190 | Waveguide-to-Microstrip Transitions   | Beaudette, R.G.<br>Kushner, L.J.   | Microwave J., Vol. 32,<br>No. 9, September 1989,<br>pp. 211-216 ADA216806                 |
| 6192 | Infrared Absorption of Ir and IrSi Thin Films on Si Substrates  | Chen, C.K.<br>Tsaun, B-Y.<br>Finn, M.C.  | Appl. Phys. Lett., Vol. 54,<br>No. 4, 23 January 1989,<br>pp. 310-312 ADA205237           |
| 6194 | Laser Radar Reflective Tomography Utilizing a Streak Camera for Precise Range Resolution  | Knight, F.K.<br>Klick, D.I.<br>Ryan-Howard, D.P.<br>Therault, J.R., Jr.<br>Tussey, B.K.<br>Beckman, A.M. | Appl. Opt., Vol. 28,<br>No. 12, 15 June 1989,<br>pp. 2196-2198 ADA212139                  |
| 6195 | Techniques for Monolithically Integrating GaAs/AlGaAs Lasers of Different Wavelengths   | Goodhue, W.D.<br>Donnelly, J.P.<br>Zayhowski, J.J.   | J. Vac. Sci. Technol. B,<br>Vol. 7, No. 2, March/<br>April 1989, pp. 409-411<br>ADA208492 |
| 6201 | Validation of Model of External-Cavity Semiconductor Laser and Extrapolation from Five-Element to Multielement Fiber-Coupled High-Power Laser | Rediker, R.H.<br>Corcoran, C.<br>Pang, L.Y.<br>Liew, S.K.  | IEEE J. Quantum Elec-<br>tron., Vol. 25, No. 6,<br>June 1989, pp. 1547-1552<br>ADA214649  |
| 6202 | Linewidth and Offset Frequency Locking of External Cavity GaAlAs Lasers   | Harrison, J.<br>Mooradian, A.  | IEEE J. Quantum Elec-<br>tron., Vol. 25, No. 6,<br>June 1989, pp. 1152-1155<br>ADA214151  |

## Journal Articles

### JA No.

- |      |  |  |   |
|------|--|--|---|
| 6204 | Luminescence of (AlGa)As and GaAs Grown on the Vicinal (511)B-GaAs Surface by Molecular-Beam Epitaxy | Towe, E.<br>Fonstad, C.G.<br>Le, H.Q.<br>Hryniewicz, J.V.  | J. Vac. Sci. Technol. B,<br>Vol. 7, No. 2, March/<br>April 1989, pp. 395-397                                  |
| 6206 | Duality Between Failure Detection and Radar/Optical Maneuver Detection                               | Kerr, T.H., III  | IEEE Trans. Aerosp. Electron. Syst., Vol. 25, No. 4,<br>July 1989, pp. 581-584<br>ADA214066                   |
| 6208 | Effect of Quasibound-State Lifetime on the Oscillation Power of Resonant Tunneling Diodes            | Brown, E.R.<br>Parker, C.D.<br>Sollner, T.C.L.G.   | Appl. Phys. Lett., Vol. 54,<br>No. 10, 6 March 1989,<br>pp. 934-936 ADA208985                                 |
| 6210 | Using Correlated Photometers to Measure the Average Velocity of Pyrotechnic Exhaust Particles        | Cohen, D.L.  | Rev. Sci. Instrum., Vol. 60,<br>No. 4, April 1989,<br>pp. 653-656   |
| 6211 | Picosecond GaAs-Based Photoconductive Optoelectronic Detectors                                       | Smith, F.W.<br>Le, H.Q.<br>Diadiuk, V.<br>Hollis, M.A.<br>Calawa, A.R.<br>Gupta, S.<br>Frankel, M.<br>Dykaar, D.R.<br>Mourou, G.A.<br>Hsiang, T.Y. | Appl. Phys. Lett., Vol. 54,<br>No. 10, 6 March 1989,<br>pp. 890-892 ADA208986                                 |
| 6213 | Experimental Observation of Thermal-Blooming Phase-Compensation Instability                          | Johnson, B.<br>Primmerman, C.A.  | Opt. Lett., Vol. 14,<br>No. 12, 15 June 1989,<br>pp. 639-641 ADA211466  |
| 6214 | Etching with Directed Beams  | Geis, M.W.<br>Pang, S.W.<br>Efremow, N.N., Jr.<br>Lincoln, G.A.<br>Johnson, G.D.<br>Goodhue, W.D.  | Chapter 1 in <i>Ion Beam Deposition, Film Modification, and Synthesis</i> ,<br>Noyes Publ., 1989,<br>pp. 1-23 |

## Journal Articles

### JA No.

- |      |  |   |   |
|------|--|---|---|
| 6215 | Sum Frequency Generation of Sodium Resonance Radiation   | Jeys, T.H.<br>Brailove, A.A.<br>Mooradian, A.   | Appl. Opt., Vol. 28,<br>No. 13, 1 July 1989,<br>pp. 2588-2591 ADA212723               |
| 6217 | Hole Trapping in Reoxidized Nitrided Silicon Dioxide   | Dunn, G.J.  | J. Appl. Phys., Vol. 65,<br>No. 12, 15 June 1989,<br>pp. 4879-4883 ADA212031          |
| 6218 | Structural Properties of As-Rich GaAs Grown by Molecular Beam Epitaxy at Low Temperatures  | Kaminska, M.<br>Liliental-Weber, Z.<br>Weber, E.R.<br>George, T.<br>Kortright, J.B.<br>Smith, F.W.<br>Tsaor, B-Y.<br>Calawa, A.R. | Appl. Phys. Lett., Vol. 54,<br>No. 19, 8 May 1989,<br>pp. 1881-1883                   |
| 6220 | The FLOWS Automatic Weather Station Network  | Wolfson, M.M.   | J. Atmos. Oceanic Technol., Vol. 6, No. 2,<br>April 1989, pp. 307-326                 |
| 6222 | Possible Observation of a Spin-Density Wave in $\text{La}_2\text{CuO}_4$ by Raman Scattering                                       | Zeiger, H.J.<br>Strauss, A.J.<br>Dresselhaus, G.<br>Liu, Y.C.<br>Picone, P.J.<br>Dresselhaus, M.S.                                | Phys. Rev. B, Vol. 40,<br>No. 13, 1 November 1989,<br>pp. 8891-8898 ADA215510         |
| 6223 | Zone-Melting Recrystallization with Enhanced Radiative Heating for Preparation of Subboundary-Free Silicon-on-Insulator Thin Films | Chen, C.K.<br>Im, J.S.  | Appl. Phys. Lett., Vol. 55,<br>No. 12, 18 September 1989,<br>pp. 1238-1240 ADA214062  |
| 6224 | Diffraction Optical Elements for Use in Infrared Systems   | Swanson, G.J.<br>Veldkamp, W.B.   | Opt. Eng., Vol. 28,<br>No. 6, June 1989,<br>pp. 605-608 ADA210783                     |
| 6225 | End-Pumped Nd:LaF <sub>3</sub> and Nd:LaMgAl <sub>11</sub> O <sub>19</sub> Lasers  | Fan, T.Y.<br>Kokta, M.R.  | IEEE J. Quantum Electron., Vol. 25, No. 8,<br>August 1989, pp. 1845-1849<br>ADA214064 |

## Journal Articles

### JA No.

- |      |  |  |  |
|------|--|--|--|
| 6226 | Selective Area Laser Photo-deposition of Transparent Conductive SnO <sub>2</sub> Films | Kunz, R.R.<br>Rothschild, M.<br>Ehrlich, D.J.  | Appl. Phys. Lett., Vol. 54,<br>No. 17, 24 April 1989,<br>pp. 1631-1633 ADA208469 |
| 6227 | Tunable Magnetostatic-Wave Oscillator Employing a Single GaAs MMIC Chip                | Chen, C-L.<br>Mahoney, L.J.  | Electron Lett., Vol. 25,<br>No. 3, 2 February 1989,<br>pp. 196-197 ADA209966     |
| 6229 | Single-Frequency Microchip Nd Lasers   | Zayhowski, J.J.<br>Mooradian, A.   | Opt. Lett., Vol. 14,<br>No. 1, 1 January 1989,<br>pp. 24-26                      |
| 6231 | Optical Spatial Tracking Using Coherent Detection in the Pupil Plane                   | Swanson, E.A.<br>Carter, G.M.<br>Bernays, D.J.<br>Hodsdon, D.M.  | Appl. Opt., Vol. 28,<br>No. 18, 15 September 1989,<br>pp. 3918-3928 ADA209970    |
| 6232 | Microscopic Model of Hetero-epitaxy of GaAs on Si(100)                                 | Kaxiras, E.<br>Alerhand, O.L.<br>Joannopoulos, J.D.<br>Turner, G.W.  | Phys. Rev. Lett., Vol. 62,<br>No. 21, 22 May 1989,<br>pp. 2484-2486              |
| 6233 | Design of a Real-Time Imaging and Discrimination System                                | Bowling, S.B.<br>Ford, R.A.<br>Vote, F.W.  | Linc. Lab. J., Vol. 2,<br>No. 1, Spring 1989,<br>pp. 95-104 ADA208984            |
| 6235 | High-Power, Diffraction-Limited, Narrow-Band, External-Cavity Diode Laser              | Sharfin, W.F.<br>Seppala, J.P.<br>Mooradian, A.<br>Soltz, B.A.<br>Waters, R.G.<br>Vollmer, B.J.<br>Bystrom, K.J. | Appl. Phys. Lett., Vol. 54,<br>No. 18, 1 May 1989,<br>pp. 1731-1733 ADA208493    |
| 6238 | Using Langmuir Probes to Measure Ion Velocities in Pyrotechnic Plasmas                 | Cohen, D.L.  | Linc. Lab. J., Vol. 2,<br>No. 1, Spring 1989,<br>pp. 35-40 ADA208924             |
| 6243 | Robust Hoo Control Design for Systems with Structured Parameter Uncertainty            | Madiwale, A.N.<br>Haddad, W.M.<br>Bernstein, D.S.  | Syst. Cont. Lett., Vol. 12,<br>No. 5, June 1989,<br>pp. 393-407                  |

## Journal Articles

### JA No.

6248	Laser Bilayer Etching of GaAs Surfaces	Maki, P.A. Ehrlich, D.J.	Appl. Phys. Lett., Vol. 55, No. 2, 10 July 1989, pp. 91-93 ADA217560
6249	Relative Performance of Impedance-Matched Lumped-Element and Traveling-Wave Integrated-Optical Phase Modulators	Johnson, L.M.	IEEE Photon. Technol. Lett., Vol. 1, No. 5, May 1989, pp. 102-104 ADA212722
6250	High-Sensitivity Lumped-Element Bandpass Modulators in LiNbO <sub>3</sub>	Betts, G.E. Johnson, L.M. Cox, C.H., III	J. Lightwave Technol., Vol. 7, No. 12, December 1989, pp. 2078-2083
6251	Effect of an Al Overlayer on Interface States in Poly-Si Gate MOS Capacitors	Dunn, G.J.	IEEE Electron Device Lett., Vol. 10, No. 7, 7 July 1989, pp. 333-335 ADA214077
6252	Asymptotic Surface Field of Slot Antenna on Coated Cylindrical Conductor	Chalupa, J.V.	Electron. Lett., Vol. 25, No. 24, 23 November 1989, pp. 1657-1658
6253	Early Work at Lincoln Laboratory on GaAs Semiconductor Devices	Rediker, R.H.	Linc. Lab. J., Vol. 2, No. 1, Spring 1989, pp. 3-4 ADA208921
6257	A Generic Architecture for Wafer-Scale Neuromorphic Systems	Raffel, J.I. Mann, J.R. Berger, R. Soares, A.M. Gilbert, S.	Linc. Lab. J., Vol. 2, No. 1, Spring 1989, pp. 63-76 ADA208495
6258	A Compact Programmable Array Processor	Hall, F.E. Rocco, A.G.	Linc. Lab. J., Vol. 2, No. 1, Spring 1989, pp. 41-62 ADA208496
6259	Machine Intelligence Technology for Automatic Target Recognition	Verly, J.G. Delanoy, R.L. Dudgeon, D.E.	Linc. Lab. J., Vol. 2, No. 2, Summer 1989, pp. 277-311 ADA214517

## Journal Articles

### JA No.

6260	Lamp Shop Hint	Hovey, D.L. McMillan, J.N.	Fusion, J. Amer. Sci. Glassblowers Soc., Vol. XXXVI, No. 2, May 1989, p. 62
6261	Growth of Textured Diamond Films on Foreign Substrates from Attached Seed Crystals	Geis, M.W.	Appl. Phys. Lett., Vol. 55, No. 6, 7 August 1989, pp. 550-552 ADA214078
6262	Superconductive Analog Signal Processing Devices	Withers, R.S. Ralston, R.W.	Proc. IEEE, Vol. 77, No. 8, August 1989, pp. 1247-1263 ADA215520
6263	128 × 128-Element IrSi Schottky-Barrier Focal Plane Arrays for Long-Wavelength Infrared Imaging	Tsaur, B-Y. McNutt, M.J. Bredthauer, R.A. Mattson, R.B.	IEEE Electron Device Lett., Vol. 10, No. 8, August 1989, pp. 361-363 ADA214514
6265	Microchannel Heat Sinks for Two-Dimensional High- Power-Density Diode Laser Arrays	Missaggia, L.J. Walpole, J.N. Liau, Z-L. Phillips, R.J.	IEEE J. Quantum Elec- tron., Vol. 25, No. 9, September 1989, pp. 1988-1992 ADA214063
6266	Thirty Years of Research and Development in Space Communications at Lincoln Laboratory	Ward, W.W. Floyd, F.W., Jr.	Linc. Lab. J., Vol. 2, No. 1, Spring 1989, pp. 5-34 ADA208497
6267	Mass-Transported GaInAsP/InP Lasers	Liau, Z-L. Walpole, J.N.	Linc. Lab. J., Vol. 2, No. 1, Spring 1989, pp. 77-94 ADA208645
6268	Engineering Composite Materials	Fan, J.C.C. Tsaur, B-Y.	Electron. Eng. Times, Iss. 530, 20 March 1989, p. T4
6269	Gallium Phosphide Microlenses by Mass Transport	Liau, Z-L. Diadiuk, V. Walpole, J.N. Mull, D.E.	Appl. Phys. Lett., Vol. 55, No. 2, 10 July 1989, pp. 97-99 ADA212310

## Journal Articles

### JA No.

6270	Adaptive-Optics Compensation through a High-Gain Raman Amplifier	Higgs, C. Ariel, E.D. Player, B.E. Bradley, L.C., III	Linc. Lab. J., Vol. 2, No. 1, Spring 1989, pp. 105-127 ADA208923
6271	Lateral Mode Control of an AlGaAs Laser Array in a Talbot Cavity	Leger, J.R.	Appl. Phys. Lett., Vol. 55, No. 4, 24 July 1989, pp. 334-336 ADA212140
6273	Frequency-Modulated Nd:YAG Microchip Lasers	Zayhowski, J.J. Mooradian, A.	Opt. Lett., Vol. 14, No. 12, 15 June 1989, pp. 618-620 ADA211465
6277	Wavelength Independent Faraday Isolator	Schulz, P.A.	Appl. Opt., Vol. 28, No. 20, 15 October 1989, pp. 4458-4464
6280	Microchip Lasers	Zayhowski, J.J. Mooradian, A.	Opt. Soc. Am., <i>Topical Meeting on Tunable Solid State Lasers</i> , 1989, Vol. 5, pp. 288-294 ADA215514
6281	Output Performance of Idealized Microwave Power Amplifiers	Kushner, L.J.	Microwave J., Vol. 32, No. 10, October 1989, pp. 103-116
6284	New OMVPE Reactor for Large Area Uniform Deposition of InP and Related Alloys	Palmateer, S.C. Groves, S.H. Caunt, J.W. Hovey, D.L.	J. Electron. Mater., Vol. 18, No. 5, September 1989, pp. 645-649 ADA215512
6287A	Electrical, Crystallographic, and Optical Properties of ArF Laser Modified Diamond Surfaces	Geis, M.W. Rothschild, M. Kunz, R.R. Aggarwal, R.L. Wall, K.F. Parker, C.D. McIntosh, K.A. Efremow, N.N., Jr. Zayhowski, J.J. Ehrlich, D.J. Butler, J.E.	Appl. Phys. Lett., Vol. 55, No. 22, 27 November 1989, pp. 2295-2297



## Journal Articles

### JA No.

6290	Pattern Classification Using Neural Networks	Lippmann, R.P.	IEEE Commun. Mag., Vol. 27, No. 11, November 1989, pp. 47-64 ADA216665
6298	Effects of Excimer Laser Irradiation on the Transmission, Index of Refraction, and Density of Ultraviolet Grade Fused Silica	Rothschild, M. Ehrlich, D.J. Shaver, D.C.	Appl. Phys. Lett., Vol. 55, No. 13, 25 September 1989, pp. 1276-1278 ADA214650
6302	Colonel Richard's Game	Grometstein, A.A. Shoham, D.	Linc. Lab. J., Vol. 2, No. 2, Summer 1989, pp. 235-246 ADA214651
6307	Coherent Optical Communication with Injection Locked High Power Semiconductor Laser Array	Lucente, M. Kintzer, E.S. Alexander, S.B. Fujimoto, J.G. Chan, V.W.S.	Electron Lett., Vol. 25, No. 17, 17 August 1989, pp. 1112-1113 ADA215524
6308	Scalable, End-Pumped, Diode-Laser-Pumped Laser	Fan, T.Y. Sanchez, A. DeFeo, W.E.	Opt. Lett., Vol. 14, No. 19, 1 October 1989, pp. 1057-1059 ADA214155
6309	Highly Uniform GaAs/AlGaAs GRIN-SCH SQW Diode Lasers Grown by Organometallic Vapor Phase Epitaxy	Wang, C.A. Choi, H-K. Connors, M.K.	IEEE Photon. Technol. Lett., Vol. 1, No. 11, November 1989, pp. 351-353 ADA217562
6310	Oscillations Up to 420 GHz in GaAs/AlAs Resonant Tunneling Diodes	Brown, E.R. Sollner, T.C.L.G. Parker, C.D. Goodhue, W.D. Chen, C-L.	Appl. Phys. Lett., Vol. 55, No. 17, 23 October 1989, pp. 1777-1779 ADA215232
6312	Controlled-Ambient Photolithography of Polysilane Resists at 193 nm	Kunz, R.R. Rothschild, M. Ehrlich, D.J. Sawan, S.P. Tsai, Y.G.	J. Vac. Sci. Technol. B, Vol. 7, No. 6, November/December 1989, pp. 1629-1633 ADA217588

## Journal Articles

### JA No.

- |      |  |   |  |
|------|--|---|--|
| 6313 | Femtosecond Passively Mode-Locked Ti:Al <sub>2</sub> O <sub>3</sub> Laser with a Nonlinear External Cavity | Goodberlet, J.<br>Wang, J.<br>Fujimoto, J.G.<br>Schulz, P.A.                  | Opt. Lett., Vol. 14,<br>No. 20, 15 October 1989,<br>pp. 1125-1127                          |
| 6314 | Dynamic Error Compensation of Analog-to-Digital Converters   | Asta, D.<br>Irons, F.H.   | Linc. Lab. J., Vol. 2,<br>No. 2, Summer 1989,<br>pp. 161-182 ADA214120                     |
| 6323 | External-Cavity Coherent Operation of InGaAsP Buried-Heterostructure Laser Array                           | Diadiuk, V.<br>Liau, Z-L.<br>Walpole, J.N.<br>Caunt, J.W.<br>Williamson, R.C. | Appl. Phys. Lett., Vol. 55,<br>No. 21, 20 November<br>1989, pp. 2161-2163<br>ADA217422     |
| 6326 | Speckle Imaging through the Atmosphere   | Beavers, W.I.<br>Dudgeon, D.E.<br>Beletic, J.W.<br>Lane, M.T.                 | Linc. Lab. J., Vol. 2,<br>No. 2, Summer 1989,<br>pp. 207-228 ADA214652                     |
| 6327 | High Performance Optical Analog Link Using External Modulator  | Betts, G.E.<br>Johnson, L.M.<br>Cox, C.H., III<br>Lowney, S.D.                | IEEE Photon. Technol.<br>Lett., Vol. 1, No. 11,<br>November 1989,<br>pp. 404-406 ADA217589 |
| 6331 | Millimeter Load Pull Measurements  | Actis, R.<br>McMorran, R.A.   | Appl. Microwave, Vol. 1,<br>No. 3, November/<br>December 1989, pp. 91-102                  |
| 6332 | An Interactive Plotting and Data-Analysis Package for the IBM PC   | Karon, S.N.   | Linc. Lab. J., Vol. 2,<br>No. 2, Summer 1989,<br>pp. 229-234 ADA215391                     |
| 6335 | Tomographic Techniques Applied to Laser Radar Reflective Measurements                                      | Knight, F.K.<br>Kulkarni, S.R.<br>Marino, R.M.<br>Parker, J.K.                | Linc. Lab. J., Vol. 2,<br>No. 2, Summer 1989,<br>pp. 143-160 ADA214079                     |
| 6338 | Air Traffic Control Development at Lincoln Laboratory  | Drouilhet, P.R., Jr.  | Linc. Lab. J., Vol. 2,<br>No. 3, Fall 1989, pp. 331-344                                    |

## Journal Articles

### JA No.

- |      |   |  |  |
|------|---|--|--|
| 6340 | The Kiernan Reentry Measurements System on Kwajalein Atoll  | Roth, K.R.<br>Austin, M.E.<br>Frediani, D.J., Jr.<br>Knittel, G.H.<br>Mrstik, A.V. | Linc. Lab. J., Vol. 2,<br>No. 2, Summer 1989,<br>pp. 247-276 ADA214150             |
| 6341 | Using Molecular-Beam Epitaxy to Fabricate Quantum-Well Devices  | Goodhue, W.D.  | Linc. Lab. J., Vol. 2,<br>No. 2, Summer 1989,<br>pp. 183-206 ADA214080             |
| 6347 | Gain-Switched Pulsed Operation of Microchip Lasers  | Zayhowski, J.J.<br>Ochoa, J.R.<br>Mooradian, A.                                    | Opt. Lett., Vol. 14,<br>No. 23, 1 December 1989,<br>pp. 1318-1320 ADA217563        |
| 6363 | Sequential Ar-O <sub>2</sub> Sputtering of Y <sub>2</sub> O <sub>3</sub> , BaF <sub>2</sub> , and CuO Targets for Preparation of Y-Ba-Cu-O Superconducting Films Without Wet-O <sub>2</sub> Annealing | Bhushan, M.<br>Strauss, A.J.<br>Finn, M.C.   | Appl. Phys. Lett., Vol. 55,<br>No. 23, 4 December 1989,<br>pp. 2438-2440 ADA217508 |
| 6372 | Modeling of Air-to-Air Visual Acquisition   | Andrews, J.W.  | Linc. Lab. J., Vol. 2, No. 3,<br>Fall 1989, pp. 475-482                            |
| 6373 | The Mode S Beacon Radar System  | Orlando, V.A.  | Linc. Lab. J., Vol. 2, No. 3,<br>Fall 1989, pp. 345-362                            |
| 6374 | Multisensor Surveillance for Improved Aircraft Tracking   | Gertz, J.L.  | Linc. Lab. J., Vol. 2, No. 3,<br>Fall 1989, pp. 381-396                            |
| 6375 | Using Aircraft Radar Tracks to Estimate Winds Aloft   | Hollister, W.M.<br>Bradford, E.R.<br>Welch, J.D.                                   | Linc. Lab. J., Vol. 2, No. 3,<br>Fall 1989, pp. 555-565                            |
| 6376 | Parallel Runway Monitor   | LaFrey, R.R.   | Linc. Lab. J., Vol. 2, No. 3,<br>Fall 1989, pp. 411-436                            |
| 6377 | Propagation of Mode S Beacon Signals on the Airport Surface   | Wood, M.L., Jr.  | Linc. Lab. J., Vol. 2, No. 3,<br>Fall 1989, pp. 397-410                            |
| 6387 | Applying Artificial Intelligence Techniques to Air Traffic Control Automation   | Spencer, D.A.  | Linc. Lab. J., Vol. 2, No. 3,<br>Fall 1989, pp. 537-554                            |

## Journal Articles

### JA No.

6396	Experimental Examination of the Benefits of Improved Terminal Air Traffic Control Planning	Spencer, D.A. Andrews, J.W. Welch, J.D.	Linc. Lab. J., Vol. 2, No. 3, Fall 1989, pp. 527-536
6397	Wind Shear Detection with Pencil-Beam Radars	Merritt, M.W. Klingel-Wilson, D. Campbell, S.D.	Linc. Lab. J., Vol. 2, No. 3, Fall 1989, pp. 483-510
6398	Advances in Primary-Radar Technology	Stone, M.L. Anderson, J.R.	Linc. Lab. J., Vol. 2, No. 3, Fall 1989, pp. 363-380
6399	TCAS: A System for Preventing Midair Collisions	Harman, W.H., III	Linc. Lab. J., Vol. 2, No. 3, Fall 1989, pp. 437-458
6400	Wind Shear Detection with Airport Surveillance Radars	Weber, M.E. Noyes, T.A.	Linc. Lab. J., Vol. 2, No. 3, Fall 1989, pp. 511-526
6404	Multipath Modeling for Simulating the Performance of the Microwave Landing System	Evans, J.E. Capon, J. Shnidman, D.A.	Linc. Lab. J., Vol. 2, No. 3, Fall 1989, pp. 459-474

## MEETING SPEECHES

### MS No.

7611	A Memory-Controlled Cross-point Switch Using E-Beam Restructuring	Fried, J. Daly, E. Lyszczarz, T. Cooperman, M.	IEEE J. Solid State Circuits, Vol. 24, No. 1, February 1989, pp. 183-187
7678C	Recent Advances in Solid State Laser Technology	Mooradian, A.	Intl. Conf. on Optoelectronics Science & Engineering, 5-8 July 1989
7679	High Repetition Rate Alexandrite Laser-Viewgraphs	Sam, R.C. Yeh, J.J. Leslie, K. Jennings, J. Tavolacci, J.	Proc. of the Intl. Conf. on Lasers '87, 7-11 December 1987
7683A	A Self-Organizing Neural Net Chip	Mann, J.R. Raffel, J.I. Lippmann, R.P. Berger, R.	Neural Networks for Computing, 6-10 April 1988
7741A	Integrated-Optical Interferometric $2 \times 2$ Switches	Johnson, L.M. Roussell, H.V.	SPIE, Vol. 993, <i>Integrated Optical Circuit Engineering VI</i> , 1988, pp. 76-79
7820	Superconducting Resonators and High- $T_c$ Materials	Oates, D.E. Anderson, A.C. Steinbeck, J.	Proc. IEEE 42nd Annual Frequency Control Symp., 1988, pp. 545-549
7835A	Adaptive-Optics Compensation in a Raman Amplifier Configuration	Trainor, D.W. Russell, J.A. Roberts, T. Nicholson, W. Smith, M.J. Higgs, C. Ariel, E.D. Player, B.E.	SPIE, Vol. 1031, <i>Gas Flow and Chemical Lasers</i> , 1988, pp. 485-487

## Meeting Speeches

### MS No.

7841	Nonreciprocal Magneto-Optics for Millimeter Waves	Dionne, G.F. Weiss, J.A. Allen, G.A.	IEEE Trans. Magn., Vol. 24, No. 6, November 1988, pp. 2817-2819 ADA211061
7882A	Bulk-Acoustic-Wave Resonators Using Holographic Reflection Gratings in Photorefractive Materials	Oates, D.E. Pan, J.Y.	<i>Ferroelectrics</i> , Vol. 92, 1989, pp. 253-262 ADA212194
7884	Adaptive Optics for Large Aperture Coherent Laser Radars	Zirkind, N.E. Shapiro, J.H.	SPIE, Vol. 999, <i>Laser Radar III</i> , 1988, pp. 117-135 ADA207568
7887B	Suppression of Raman Amplification Using Large Stokes Seeds	Heinrichs, R.M. Winkler, I.C.	SPIE, Vol. 1060, <i>Non-linear Optical Beam Manipulation and High Energy Beam Propagation Through the Atmosphere</i> , 1989, pp. 2-6
7927A	1 Gb/s Free-Space Optical Interconnection Between Digital Circuits	Tsang, D.Z.	LEOS '88, Lasers and Electro-Optics Society Annual Mtg., 2-4 November 1988, pp. 11-12
7927B	Free-Space Optical Interconnects	Tsang, D.Z.	SPIE, Vol. 994, <i>Optoelectronic Materials, Devices, Packaging, and Interconnects II</i> , 1988, pp. 73-76
7929	Microburst Recognition Performance of TDWR Operational Testbed	Campbell, S.D. Merritt, M.W. DiStefano, J.T.	Third Intl. Conf. on the Aviation Weather System, 30 January — 3 February 1989, pp. 25-30
7931	Real-Time Signal Processing Data Acquisition Subsystem	Sarafinas, G.A. Stein, A.J. Bisson, K.J.	SPIE, Vol. 999, <i>Laser Radar III</i> , 1988, pp. 238-247 ADA207567

## Meeting Speeches

### MS No.

7940	Two-Dimensional Tomographs Using Range Measurements	Knight, F.K. Klick, D.I. Ryan-Howard, D.P. Theriault, J.R., Jr. Tussey, B.K. Beckman, A.M.	SPIE, Vol. 999, <i>Laser Radar III</i> , 1988, pp. 269-280
7942C	Coherent Optical Inter-satellite Crosslink Systems	Chan, V.W.S. Kaufmann, J.E.	SPIE, Vol. 988, <i>Components for Fiber Optic Applications III and Coherent Lightwave Communications</i> , 1989, pp. 325-335 ADA208787
7942F	Intersatellite Optical Heterodyne Communication System	Chan, V.W.S.	SPIE, Vol. 1131, <i>Optical Space Communication</i> , 1989, pp. 204-215
7947	Superconducting Thin Films of BiSrCaCuO Made by Sequential Electron Beam Evaporation	Steinbeck, J. Anderson, A.C. Tsaur, B-Y. Strauss, A.J.	IEEE Trans. Magn., Vol. 25, No. 2, March 1989, pp. 2429-2432
7948	Low-Loss Lumped-Element Capacitors for Superconductive Integrated Circuits	Bhushan, M. Green, J.B. Anderson, A.C.	IEEE Trans. Magn., Vol. 25, No. 2, March 1989, pp. 1143-1146
7950	Process Control for the Low-Temperature Deposition of Niobium-Nitride Thin Films	Anderson, A.C. Lichtenwalner, D.J. Brogan, W.T.	IEEE Trans. Magn., Vol. 25, No. 2, March 1989, pp. 2084-2088
7951	Processing of Thick-Film Dielectrics Compatible with Thin-Film Superconductors for Analog Signal Processing Devices	Wong, S.C. Anderson, A.C. Rudman, D.A.	IEEE Trans. Magn., Vol. 25, No. 2, March 1989, pp. 1255-1257
7958	The Relationship Between Lightning Type and Convective State of Thunderclouds	Williams, E.R. Weber, M.E. Orville, R.E.	J. Geophys. Res., Vol. 94, No. D11, 30 September 1989, pp. 13,213-13,220

## Meeting Speeches

### MS No.

7964	Dependence of Y-Branch Loss on Waveguide Mode Confinement	Rediker, R.H. Eriksen, L.M. Lind, T.A.	SPIE, Vol. 994, <i>Opto-electronic Materials, Devices, Packaging, and Interconnects II</i> , 1989, pp. 212-216 ADA208470
7975	Restructurable VLSI — A Demonstrated Wafer Scale Technology	Wyatt, P.W. Raffel, J.I.	Proc. IEEE Intl. Conf. on Wafer Scale Integration, 3-5 January 1989, pp. 13-20
7978	SLASH — An RVLSI CAD System	Frankel, R.S. Hunt, J.J. Van Alstyne, M. Young, G.R.	Proc. IEEE Intl. Conf. on Wafer Scale Integration, 3-5 January 1989, pp. 31-37
7980	RVLSI Applications and Physical Design	Anderson, A.H. Berger, R. Konkle, K.H. Rhodes, F.M.	Proc. IEEE Intl. Conf. on Wafer Scale Integration, 3-5 January 1989, pp. 39-45 ADA206913
7987	The Technology of Laser Formed Interactions for Wafer-Scale Integration	Chapman, G.H. Canter, J.M. Cohen, S.S.	Proc. IEEE Intl. Conf. on Wafer Scale Integration, 3-5 January 1989, pp. 21-29
7989	Using Features Aloft to Improve Timeliness of TDWR Hazard Warnings	Campbell, S.D. Isaminger, M.A.	Third Intl. Conf. on the Aviation Weather System, 30 January — 3 February 1989, pp. 184-189
7992	Gust Front Detection Algorithm for the Terminal Doppler Weather Radar: Part 2, Performance Assessment	Klingel-Wilson, D. Olson, S.H. Wilson, W. Mahoney, W.P., III Smith, S.D. Witt, A. Eilts, M.D.	Third Intl. Conf. on the Aviation Weather System, 30 January — 3 February 1989, pp. 398-402
7996	Threshold Voltage and Transconductance of Fully Depleted Thin-Film SOI MOSFET's	Lee, C-T. Wyatt, P.W.	1988 IEEE SOS/SOI Technology Workshop, 3-5 October 1988, p. 40
7997	300 Watt Dye Laser for Field Experimental Site	Everett, P.N.	Proc. of the Intl. Conf. on Lasers '88, 5-9 December 1988, pp. 404-409 ADA210706



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7998	Reduction of Intermodulation Distortion in Interferometric Optical Modulators	Johnson, L.M. Roussell, H.V.	LEOS '88, Lasers and Electro-Optics Society Annual Mtg., 2-4 November 1988, pp. 119-120
8000	Range Obscuration Mitigation by Adaptive PRF Selection for the TDWR System	Crocker, S.C.	24th Conf. on Radar Meteorology, 27-31 March 1989, pp. 175-178
8001	SAW/FET Programmable Filter with Varistor Taps for Improved Performance	Oates, D.E. Smythe, D.L. Green, J.B. Withers, R.S.	IEEE 1988 Ultrasonics Symp., 1988, Vol. 1, pp. 155-158 ADA207564
8009	Performance of a Coherent Integrator Followed by an M out of N Detection Algorithm Against Partially Correlated, Fluctuating Targets	Margolin, J.	1989 Intl. Conf. on Radar, Vol. 2, 24-28 April 1989, pp. 162-167
8013	Microburst Divergence Detection for Terminal Doppler Weather Radar	Merritt, M.W.	24th Conf. on Radar Meteorology, 27-31 March 1989, pp. 220-223
8017	A Comparison of Superconductive and Surface-Acoustic-Wave Signal Processing	Withers, R.S.	IEEE 1988 Ultrasonics Symp., Vol. 1, 1988, pp. 185-194 ADA207589
8018	Use of Features Aloft in the TDWR Microburst Recognition Algorithm	Campbell, S.D.	24th Conf. on Radar Meteorology, 27-31 March 1989, pp. 167-170
8025	Patterned Excimer Laser Etching of GaAs Within a Molecular Beam Epitaxy System	Maki, P.A. Ehrlich, D.J.	Mat. Res. Soc. Symp. Proc., Vol. 129, 1989, pp. 585-590
8035	UV Enhancement of Surface Catalytic Polymerization of Ethylene	Purohit, P.V. Rothschild, M. Ehrlich, D.J.	Mat. Res. Soc. Symp. Proc., Vol. 129, 1989, pp. 259-266 ADA217566

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8036	Plasma-Activated Ion Beam Reactive Sputtering of NbN Thin Films	Lichtenwalner, D.J. Anderson, A.C. Rudman, D.A.	Mat. Res. Soc. Symp. Proc., Vol. 128, 1989, pp. 67-72 ADA210781
8052	A Multistage Projection Structure for Multi- dimensional Signal Detection	Chu, P.L.	ICASSP '89, Proc. IEEE Intl. Conf. on Acoustics, Speech & Sig. Proc., Vol. 3, 23-26 May 1989, pp. 1484-1487
8056	Machine Intelligence Applied to Radar Image	Aull, A.M. Gabel, R.A.	ICASSP '89, Proc. IEEE Intl. Conf. on Acoustics, Speech & Sig. Proc., Vol. 1, 23-26 May 1989, pp. 1791-1794
8059	Some Applications of Ion Beams in III-V Compound Semiconductor Device Fabrication	Donnelly, J.P. Anderson, K.K. Woodhouse, J.D. Goodhue, W.D. Yap, D. Gaidis, M.C. Wang, C.A.	Mat. Res. Soc. Symp. Proc., Vol. 144, 1989, pp. 421-432
8060	Mirror Surface Aberrations and Mixing Efficiency	Kachelmyer, A.L.	SPIE, Vol. 1045, <i>Modeling and Simulation of Laser Systems</i> , 1989, pp. 85-98 ADA212030
8063	The Lincoln Robust Continuous Speech Recognizer	Paul, D.B.	ICASSP '89, Proc. IEEE Intl. Conf. on Acoustics, Speech & Sig. Proc. Vol. 1, 23-26 May 1989, pp. 449-451
8064	Phase Coherence in Speech Reconstruction for Enhance- ment and Coding Applications	Quatieri, T.F. McAulay, R.J.	ICASSP '89, Proc. IEEE Intl. Conf. on Acoustics, Speech & Sig. Proc., Vol. 1, 23-26 May 1989, pp. 207-209
8066	Time-Resolved Phase and Intensity Measurements of a Pulsed Dye Laser Using an Integrated-Optics Wavefront Sensor	Zollars, B.G. Rediker, R.H. Swedberg, J.L. Mahan, J.M. Hatch, R.E.	Proc. of the Intl. Conf. on Lasers '88, 5-9 December 1988, pp. 425-432 ADA210705

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| 8067  | Optomechanical Design of a Space-Based Diode-Laser Transmitter Assembly       | Pillsbury, A.D.<br>Taylor, J.A.   | SPIE, Vol. 1044, <i>Optomechanical Design of Laser Transmitters and Receivers</i> , 1989, pp. 112-120 ADA214154 |
| 8072  | Sidegating Reduction for GaAs Integrated Circuits by Using a New Buffer Layer | Smith, F.W.<br>Chen, C-L.<br>Turner, G.W.<br>Finn, M.C.<br>Mahoney, L.J.<br>Manfra, M.J.<br>Calawa, A.R.          | IEEE Intl. Electron Devices Mtg., Technical Digest, 11-14 December 1988, pp. 838-841 ADA214156                  |
| 8108  | Recent Advances in Adaptive Optics Methods and Technology                     | Parenti, R.R.   | SPIE, Vol. 1000, <i>Laser Wavefront Control</i> , 1989, pp. 101-109 ADA208786                                   |
| 8110  | Low-Background Application of Schottky-Barrier IR Sensors                     | Cantella, M.J.<br>Davison, N.C., III<br>Gylfphe, C.H., Jr.<br>Mattia, J.P.<br>Tsaun, B-Y.                         | SPIE, Vol. 1071, <i>Optical Sensors and Electronic Photography</i> , 1989, pp. 12-30                            |
| 8112  | Wavefront Preservation in High-Gain Raman Amplification                       | Higgs, C.   | SPIE, Vol. 1000, <i>Laser Wavefront Control</i> , 1989, pp. 12-24   |
| 8121B | High-Power, Diffraction-Limited, Narrow-Band, External-Cavity Diode Laser     | Sharfin, W.F.<br>Seppala, J.P.<br>Mooradian, A.<br>Soltz, B.A.<br>Walters, R.G.<br>Vollmer, B.J.<br>Bystrom, K.J. | Appl. Phys. Lett., Vol. 54, No. 18, 1 May 1989, pp. 1731-1733   |
| 8132  | Position Estimation of Optical Point Targets Using Staring Detector Arrays    | Tsai, M-J.<br>Rogal, F.A.   | SPIE, Vol. 1096, <i>Signal and Data Processing of Small Targets 1989</i> , 1989, pp. 78-85 ADA215230            |

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8134	Growth and Characterization of Ti:YAlO <sub>3</sub> for Tunable Solid State Laser Applications	Khattak, C.P. Schmid, F. Wall, K.F. Aggarwal, R.L.	SPIE, Vol. 1104, <i>Growth, Characterization, and Applications of Laser Host and Nonlinear Crystals</i> , 1989, pp. 95-99
8135	Conceptual Design of a Wafer-Scale Focal Plane Processor	Trepagnier, P.C.	AIAA Computers in Aerospace VII Conf., Part 1, 3-5 October 1989, pp. 164-181
8141	Spherical Vacuum-Interface Window with Axial-Flow Impingement Cooling	Holderbaum, G.S. Phillips, R.J.	SPIE, Vol. 1047, <i>Mirrors and Windows for High Power/High Energy Laser Systems</i> , 1989, pp. 141-152
8142	Boundary Layer Control for Large Optics	Johnson, D.C.	SPIE, Vol. 1047, <i>Mirrors and Windows for High Power/High Energy Laser Systems</i> , 1989, pp. 174-182
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8145	An Abutable CCD Imager for Visible and X-Ray Focal Plane Arrays	Burke, B.E. Mountain, R.W. Harrison, D.C. Reinold, J.H. Doherty, C.L., Jr. Ricker, G. Bautz, M. Doty, J.	IEEE Intl. Solid-State Circuits Conf., 15-17 February 1989, pp. 94-95

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| 8149 | Heterodyne Noise Measurements of a Microstrip, Waveguide Local Oscillator Modulator | Davidson, S.A.<br>Eng, R.S.<br>Bunis, J.L.<br>Parshall, E.R.   | SPIE, Vol. 1103, <i>Laser Radar IV</i> , 1989, pp. 2-17<br>ADA215390                                      |
| 8152 | Laser Radar Acquisition and Tracking  | Kachelmyer, A.L.   | SPIE, Vol. 1103, <i>Laser Radar IV</i> , 1989, pp. 120-138<br>ADA215523                                   |
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| 8165 | Weather Sensing with Airport Surveillance Radars                                    | Weber, M.E.  | Third Intl. Conf. on the Aviation Weather System, 30 January — 3 February 1989, pp. 68-74                 |
| 8168 | Track Initiation in a Dense Target Environment Using Multiple Sensors               | Tsai, M-J.<br>Youens, L.C.<br>Dunn, K-P.   | SPIE, Vol. 1096, <i>Signal and Data Processing of Small Targets 1989</i> , 1989, pp. 144-151<br>ADA215522 |
| 8170 | Two-Dimensional Surface-Emitting Arrays of GaAs/AlGaAs Diode Lasers                 | Donnelly, J.P.<br>Rauschenbach, K.<br>Wang, C.A.<br>Goodhue, W.D.<br>Bailey, R.J.  | SPIE, Vol. 1043, <i>Laser Diode Technology and Applications</i> , 1989, pp. 92-99<br>ADA212014            |

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8197	Effect of Quasibound-State Lifetime on the Oscillation Power of Resonant Tunneling Diodes	Brown, E.R. Parker, C.D. Sollner, T.C.L.G.	Appl. Phys. Lett., Vol. 54, No. 10, 6 March 1989, pp. 934-936
8207	Constrained Variance Control Design — A Multiobjective Control Theory	Hotz, A.F.	Proc. 1989 American Control Conf., Vol. 3, 21-23 June 1989, pp. 2071-2076
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8213	Optimal Speckle Reduction in POL-SAR Imagery and Its Effect on Target Detection	Novak, L.M. Burl, M.C.	SPIE, Vol. 1101, <i>Millimeter Wave and Synthetic Aperture Radar</i> , 1989, pp. 84-115 ADA214157
8221	Planar Power Divider & Combiner Circuits at Microwave Frequencies	Gupta, K.C. Abouzahra, M.D.	1989 SBMO Intl. Microwave Symp., 24-27 July 1989, pp. 279-284
8223	Programmable, Four-Channel, 128-Sample, 40-Ms/s Analog-Ternary Correlator	Munroe, S.C. Arsenault, D.R. Thompson, K.E. Lattes, A.L.	Proc. IEEE 1989 Custom Integrated Circuits Conf., 15-18 May 1989, pp. 25.1.1-25.1.4 ADA208548

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8235	Wavelength Independent Faraday Isolator	Schulz, P.A.	Appl. Opt., Vol. 28, No. 20, 15 October 1989, pp. 4458-4464 ADA215229
8238	Noise in an Acousto-Optic Modulated Laser Source	Kachelmyer, A.L. Eng, R.S.	SPIE, Vol. 1103, <i>Laser Radar IV</i> , 1989, pp. 92-108 ADA215511
8240	Maximum Likelihood Approach to Gamma Circumvention	Trepagnier, P.C.	SPIE, Vol. 1096, <i>Signal and Data Processing of Small Targets 1989</i> , 1989, pp. 119-126
8247	New Uniaxial-Ferrite Millimeter-Wave Junction Circulators	Weiss, J.A. Watson, N.G. Dionne, G.F.	1989 IEEE MTT-S Intl. Microwave Symp. Digest, Vol. 1, 13-15 June 1989, pp. 145-148 ADA209963
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8260	Superconducting Stripline Resonators and High- $T_c$ Materials	Oates, D.E. Anderson, A.C. Shih, B.S.	1989 IEEE MTT-S Intl. Microwave Symp. Digest, Vol. I, 13-15 June 1989, pp. 627-630 ADA209965

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| 8263 | An Analysis of Microburst Characteristics Related to Automatic Detection from Huntsville, Alabama and Denver, Colorado    | Biron, P.J.<br>Isaminger, M.A.                                  | 24th Conf. on Radar Meteorology, 27-31 March 1989, pp. 269-273  |
| 8264 | Analysis of Microburst Observability with Doppler Radar Through Comparison of Radar and Surface Wind Sensor Data          | Clark, D.A.<br>DiStefano, J.T.                                  | 24th Conf. on Radar Meteorology, 27-31 March 1989, pp. 171-174  |
| 8265 | A Theoretical and Experimental Comparison of Directly and Externally Modulated Fiber-Optic Links                          | Cox, C.H., III<br>Johnson, L.M.<br>Betts, G.E.                  | 1989 IEEE MTT-S Intl. Microwave Symp. Digest, Vol. 1, 13-15 June 1989, pp. 689-692 ADA209967  |
| 8266 | Multi-Way Unequal Power Divider Circuits Using Sector-Shaped Planar Components  | Abouzahra, M.D.<br>Gupta, K.C.                                  | 1989 IEEE MTT-S Intl. Microwave Symp. Digest, Vol. 1, 13-15 June 1989, pp. 321-324  |
| 8268 | A Very Small Frequency Generator System for Spread Spectrum EHF Applications  | Wolfson, H.M.   | MILCOM '89 Conf. Record, Vol. 3, 15-18 October 1989, pp. 749-753  |
| 8270 | Analysis of Multiport Rectangular Microstrip Structures Using a Three-Dimensional Finite Difference Time Domain Technique | Sheen, D.M.<br>Ali, S.M.<br>Abouzahra, M.D.<br>Kong, J.A.       | Progress in EM Research Symp., 25-27 July 1989  |
| 8271 | Radar Cross Section Calculation of Partially Coated Conducting Bodies   | Bridges, G.<br>Abouzahra, M.D.<br>Kishk, A.<br>Shafai, L.       | 5th Annual Review of Progress in Applied Computational Electromagnetics, 21-24 March 1989   |
| 8279 | Effect of Intensity Scintillation on the Stimulated Rotational Raman Threshold in Hydrogen                                | Heinrichs, R.M.<br>Smith, W.W.<br>Tedrow, M.M.<br>Winkler, I.C. | SPIE, Vol. 1060, <i>Nonlinear Optical Beam Manipulation and High Energy Beam Propagation Through the Atmosphere</i> , 1989, pp. 34-40 |



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8285	Binary Micro-Optics: An Application to Beam Steering	Goltsos, W.C. Holz, M.K.O.	SPIE, Vol. 1052, <i>Holographic Optics: Optically and Computer Generated</i> , 1989, pp. 131-141 ADA210780
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8317	Excited-State Absorption in Ti:YAlO <sub>3</sub>	Wall, K.F. Aggarwal, R.L. Khattak, C.P.	Opt. Soc. Am., Tunable Solid State Lasers, Vol. 5, 1-3 May 1989, pp. 238-242 ADA215513
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8345	Radiation Effects on GaAs RF Power FET and MMIC Amplifiers	Weitz, D.M. Abouzahra, M.D. Austin, J.T.	1989 Govt. Microcircuit Applications Conf., 7-9 November 1989, pp. 389-392
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8399	A Novel Technique for Fabrication of Fully Depleted CMOS Devices in Ultra-Thin SOI Films	Karulkar, P.C.	47th Annual Device Research Conf., 19-21 June 1989, p. VB-3
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